Original Article

Clinical Presentation and Surgical Management of Intestinal Tuberculosis Presented as an Acute Abdomen

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ABSTRACT

OBJECTIVE: To review the various clinical presentations and different surgical options in the management of intestinal tuberculosis at a tertiary care hospital.

METHODOLOGY: This two-year descriptive cross-sectional study was conducted at LUMHS; using a convenient sampling technique, all patients aged between 18-60 years of either gender presented with acute or sub-acute intestinal obstruction or peritonitis were admitted. Detailed history, thorough clinical examination, and relevant investigations were performed. Only those patients in whom, per operative findings of intestinal tuberculosis and later on confirmed histopathology were included in this study. Data was analyzed on SPSS version 22, and results were analyzed for mean, frequency, and percentage.

RESULTS: A total of 47 patients with intestinal tuberculosis were included. The mean age was 27.01±4.88 years, and the male to female ratio was 1.6:1. The most common constitutional symptom was weight loss in 85.1%patients, followed by fever 51% and anorexia 57.4%. Common abdominal symptoms were pain 93.6%, distension 72.34%, nausea and vomiting in 55.31%, and alternating bowel habits in 42.55% cases. 61.7% of patients presented with signs of acute or sub-acute intestinal obstruction followed by peritonitis in 21.2% and abdominal mass in 17% of patients. Ileostomy was the lifesaving procedure performed in 40.4% of cases. Other procedures were adhesiolysis, stricturoplasty, limited right hemicolectomy, segmental small bowel resection, and end-to-end anastomosis.

CONCLUSION: Intestinal tuberculosis is still an endemic disease in low-resource countries. Clinical presentation mimics many other abdominal conditions results in a delay in diagnosis. Differential diagnosis should always be kept in mind to diagnose this contagious disease.

KEY WORDS: Intestinal tuberculosis, Constitutional symptoms, Intestinal obstruction, Ileostomy

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INTRODUCTION

Tuberculosis (TB), especially in low resource countries, is a significant health burden responsible for high morbidity and mortality rates. The World Health Organization (WHO) has declared it a global emergency and is the most important infectious disease. Across the globe, in 2018, about 10.0 million (range, 9.0-11 million) people were affected with TB, out of which 1.5 million died. Eight countries are responsible for almost two-thirds of the total world burden of TB cases, and Pakistan is among the 4th of them[1].

Previously, TB was a rare disease in the Western population, but its incidence is rising because of HIV-positive cases. Among HIV-positive patients, 35-40% have concomitant extra-pulmonary manifestations of TB[2,3].

Koch's abdomen or abdominal tuberculosis is a common site for extra-pulmonary tuberculosis[4]. Tuberculous organisms reach the alimentary tract primarily by swallowing infected sputum or sometimes ingesting raw milk. The disease can also spread through the hematogenous route or direct spread from contagious lymph nodes or fallopian tubes[5]. Tuberculosis can affect the whole gastrointestinal tract from lips to anal verge and intra-abdominal solid visceras. Terminal ileum and ileocaecal regions are the most commonly affected sites[6,7].

Diagnosis of intestinal tuberculosis is always kept in mind because the disease can present in many ways. The constitutional features of intestinal tuberculosis are low-grade evening rise of temperature, weight loss, malaise, and anorexia. The standard abdominal features are pain, distension, mass, vomiting, and altered bowel habits. If these patients are not treated in time, they may end up in complications like intestinal obstruction, perforation with peritonitis, and even death may occur [8].

The treatment of intestinal tuberculosis is mainly conservative, and surgical options reserved for the patients, who present late with the complications, Intestinal tuberculosis is complicated because of its variable clinical presentation and lack of definitive diagnostic tool, so the early diagnosis is often missed. The patient usually presents when complications have occurred.

Therefore, the rationale of this study is to evaluate various clinical presentations and different surgical procedures in the management of intestinal tuberculosis. The results of this study will be helpful in the early detection of disease and planning suitable management options with a better outcome.

METHODOLOGY

This descriptive cross-sectional study was performed at Liaquat University Hospital Hyderabad and Jamshoro from July 2017 to June 2019; after institutional research and ethical committee approval, the sample size was calculated with the help of Raosoft software. Well-informed and written consent for the study was obtained from the patients. Using a convenient sampling technique, all patients aged 18-60 years, of either gender, presented with clinical features of acute or subacute intestinal obstruction or suspected case of intestinal perforation were admitted in the ward. A detailed history was taken, thorough clinical examination was performed. Baseline and specific investigations like X-ray chest and abdomen (erect and supine) and ultrasound of the abdomen was carried out in all the cases. CT scan of the abdomen and lower GI endoscopy was performed in selected cases where ever indicated. All patients underwent exploratory laparotomy. Patients were included in the study after confirmation of diagnosis on histopathological examination. Except for intestinal TB, all other patients operated on as a case of the acute abdomen were excluded from the study. Postoperatively anti-tuberculous therapy (ATT) was started in all proven cases of abdominal tuberculosis. For the initial two months (intensification phase), four drugs, including Isoniazid, Rifampicin, Ethambutol, and Pyrazinamide, were used; later on, patients were switched to Isoniazid and Rifampicin for seven months. Patients were followed-up till the completion of ATT. Performa was filled, and data were analyzed using Statistical Package for Social Sciences (SPSSiversioni22.0. Chicago, I Illinois, USA), stratified analysis was done, and results were drawn.

RESULTS

This study comprises 47 confirmed cases of intestinal tuberculosis, a total of 18 females (38.29%) and 29 males (61.70%), with a female to male ratio of 1:1.6. The mean age of patients was 27.01+4.88 years (range 18 to 60 years). The most common constitutional symptom was weight loss in 40(85%) patients, followed by fever and anorexia in 24(51%) and 27(57.4%) cases, respectively. The most frequent abdominal symptoms were a pain in the abdomen in 44(93.6%) and abdominal distension 34(72.3%), followed by nausea and vomiting in 26(55.3%) cases and alternating bowel habits in 20 (42.5%) cases (Table I).

Chest radiograph suggestive of concomitant pulmonary TB was found in 13 (27.6%), twenty-nine patients presented with intestinal obstruction, 6 (12.7%) with acute and 23(48.9%) with subacute intestinal obstruction, followed by peritonitis and abdominal mass in 10(21.2%) and 8(17%) patients respectively.

TABLE I: CLINICAL FEATURES

Sign and Symptoms	No. of patients (n=47)	Percentage (%)
Constitutional		
Weight Loss	40	85.1
Anorexia	27	57.4
Fever	24	51.0
Cough	13	27.6
Abdominal		
Abdominal Pain	44	93.6
Abdominal Distension	34	72.3
Nausea and Vomiting	26	55.3
Constipation	15	31.9
Diarrhea	13	27.6
Alternating bowel habits	20	42.5
Palpable bowel loops	15	31.9

Operative findings revealed multiple strictures in 18 (38.29%). Single stricture in 10(21.2%) cases. In comparison, single and numerous perforations were observed in 6(12.76%) and 2(8.51%) cases, respectively; eight patients (17%) had ileocaecal TB, and frozen or plastered abdomen was found in 3 (6.38%) patients (Table II).

TABLE II: OPERATIVE FINDINGS

Operative findings	No. of patients (n=47)	Percentage (%)
Multiple strictures	18	38.2
Single stricture	10	21.2
Ileocaecal hyperplastic tuberculosis	08	17.0
Single ileal perforation	06	12.7
Multiple ileal perforations	02	4.2
Frozen (Plastic abdomen), i.e., Multiple adhesions between bowel loops and abdominal wall)	03	6.3

Covering Ileostomy was performed in 19(40.4%) cases either after resection and anastomosis of the diseased part of the gut or after primary closure of the distal perforations. Other procedures were stricturoplasty, limited right hemicolectomy, segmental

small bowel resection, and anastomosis and adhesiolysis in 21.2%, 12.7%, 10.6%, and 8.5%, respectively (Table III).

Out of 47 patients, 7 (14.8%) patients expired in the post-operative period, 5 patients developed enterocutaneous fistula in which resection and anastomosis of the gut were performed and ended up with multiorgan failure and death. The other two patients expired due to pulmonary complications. None of the mortality was observed after covering Ileostomy.

TABLE III:
SURGICAL PROCEDURE PERFORMED

Surgical Procedure	No. of patients (n=47)	Percentage (%)
Covering Ileostomy	19	40.4
Stricturoplasty	10	21.2
Limited right hemicolectomy	06	12.7
Segmental small bowel resection and end to end anastomosis	05	10.6
Adhesiolysis	04	8.5
Only keep the pelvic drain and take the omental biopsy	03	6.3

DISCUSSION

Abdominal kochs are still endemic in Pakistan like other low resource countries where poverty, under nutrition, overpopulation, and poor hygienic conditions are prevalent. As the clinical accuracy to diagnose the disease is very low, and there is no reliable biochemical or imaging test is available which can diagnose the condition earlier[9,10]. Diagnostic laparoscopy or laparotomy and histo-pathological examination are often required to diagnose.

In our series of 47 cases of intestinal tuberculosis, 18 (38.3%) were female, and 29 (61.7%) were male with a female to male ratio of 1:1.6. Male gender predominance was also observed by other researchers[7,11,12].

Ages ranged from 18 – 60 years; the majority was between 20-40 years, with a mean age of 27.01+4.88 years. These results are comparable with other studies[11,13,14].

As the disease has variable clinical features, the most typical presentation was abdominal pain of variable nature ranging from dull aching to colicky type, seen in 93.6% of patients. Abdominal distension, nausea, and vomiting were other clinical features observed in 72.3% and 55.3%, respectively. Associated symptoms like low-grade pyrexia, weight loss, and irregular bowel habits were also standard features in our study population. Other researchers with variable percentages 12, 14-17 have reported similar signs and symptoms.

72.5% had primary intestinal tuberculosis in this series, only 27.6% had concomitant pulmonary TB. Our findings correlate well with other national and international studies[18,19]. In contrast to our results, Joy et al. reported more than 60% of patients having abdominal and pulmonary TB simultaneously; this difference may be because of a minimal number of patients included in their study[20].

Multiple strictures involving the terminal ileum were the commonest intra-operative finding in 38.29% of cases, followed by single stricture in 21.2% of cases. Hyperplastic ileocaecal tuberculosis was noted in 17% of patients; results correlate with our study was carried out by Mukhopadhyay A 2014[15]. Other studies showed single or multiple bowel perforations were the common pathology followed by strictures and ileocaecal mass [11,12,21,22].

The type of surgery was made on location and extent of disease, gut condition, co-morbidities, and nutrition status of the individual patient. In our study, temporary stoma formation was the frequently performed procedure (40.4%) as primary repair/anastomosis of the gut was not a suitable option in most cases because of delayed presentation. Omentum and lymph node biopsy was the only procedure performed in 3 patients because of the frozen abdomen. Stoma formation is the safest surgical procedure, especially in a patient with poor health status, advanced disease, and peritonitis are also supported by other studies[7,15,21-24].

Emergency laparotomy in health compromised patients carries high mortality and morbidity. In our series, the mortality rate was 14.8%. The high mortality rate in a range of 14-50% in developing countries is also documented by other authors[5,13,22,25].

CONCLUSION

Abdominal kochs are a significant health issue in underdeveloped countries. Though it is a curable disease, there is still high mortality and morbidity because of delay in presentation, when complications already had occurred. Disease surveillance plans need to be implemented to diagnose the disease earlier. More randomized controlled trials are required to establish evidence-based guidelines on surgical management of abdominal tuberculosis."

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AUTHOR CONTRIBUTIONS

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Abbas K: Data collection
Syed BM: Statistical analysis
Shaikh S: Data collection
Mallah Q: Data collection
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